

REMARKS

The above amendment with the following remarks is submitted to be fully responsive to the Office Action of October 18, 2004. Reconsideration of this application in light of the amendment and the allowance of this application are respectfully requested.

Claims 9-16 were pending in the present application prior to the above amendment. In response to the Office Action, claims 9-11 have been amended, claims 12 and 13 have been canceled, and new claims 17-20 have added. Therefore, claims 9-11, 14-16, and 17-20 are pending in the present application and are believed to be in proper condition for allowance.

Initially, in the Office Action, the Examiner objected to the drawings under 37 CFR 1.83(a) asserting that the drawings do not show every feature of the invention. However, the present claims are directed to a manufacturing method. Correspondingly, the drawings, as filed, illustrate, among other things, devices that are used to perform the method recited in the claims and equipment in which the formed device may be used. For example, the manufacturing method in accordance with the present invention includes forming a hole injection layer. This is described in the specification of the present application as occurring in the deposition chamber 105 shown in Figure 1 where a hole injection layer CuPc is formed over a substrate. (See page 9, lines 15-18). The method of the present invention also includes exposing the hole injection layer to a gas atmosphere. This is described in the specification as occurring in CVD chamber 107 where oxygen gas is supplied to the CVD chamber 107 once the substrate is transported thereto. (See page 9, lines 26-29).

Thus, because Figure 1 of the drawings filed already show devices used to practice the recited invention, the applicants respectfully contend that this objection is improper and should be withdrawn. To the extent that the Examiner disagrees and maintains this objection to the drawings, the applicants request clarification as to what type of drawings the Examiner is requesting keeping in mind that many process

patents do not have any drawings at all, but instead, merely describe the processes in the specification.

In the Office Action, the Examiner asserts that a substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. Whereas the applicants contend that the specification as filed fully satisfies these requirements, to expedite prosecution of the present application, a substitute specification is submitted herewith making minor changes as requested by the Examiner.

Referring again to the Office Action, claims 9 to 11 were objected to due to various informalities. In response thereto, these claims have been amended above to address the informalities. Thus, the withdrawal of the objections is respectfully requested.

In the Office Action, the Examiner rejected claims 9, 10 and 12 under 35 U.S.C. 102(b) as being anticipated by Ogawa et al. (JP 2000-068068). In response thereto, claim 9 has been amended to specifically recite that the hole injection layer is exposed to oxygen gas. It is noted that the Ogawa reference only discloses a treatment using NO₂ gas, and fails to disclose, teach, or otherwise suggest exposing the hole injection layer to oxygen gas as now recited in independent claim 9. Therefore, this rejection is believed to be overcome, and the withdrawal thereof is respectfully requested. Correspondingly, the allowance of claims 9 and 10 is also requested, claim 10 being dependent on claim 9, and claim 12 being canceled by the above amendment.

Also in the Office Action, the Examiner rejected claims 11, and 13-16 under 35 U.S.C. 103(a) as being unpatentable over Ogawa. This rejection with respect to claim 13 is rendered moot because claim 13 has been canceled. Regarding claim 11, the Examiner asserts it would be obvious to dope the phthalocyanine with an electron acceptable compound capable of oxidizing the hole injection layer of the Ogawa's oxidizing method using strong oxidizing gas. Initially, it is believed that this rejection is rendered moot in view of this claim's dependency on the amended independent claim 9 discussed above which is now believed to be in proper condition for allowance.

Regardless of this dependency, the applicants respectfully disagree with the Examiner's rejection.

Ogawa only discloses the method for oxidizing CuPc by exposing it to NO₂ gas. As the Examiner concedes, Ogawa is completely silent as to electron acceptable compounds. In contrast to Ogawa, the present invention recited in claim 11 requires oxidizing phthalocyanine by not only exposing it to electron acceptable gas, but also doping the electron acceptable compounds into the hole injection layer. Thus, the method and means for oxidizing phthalocyanine of the present invention is substantially different from Ogawa. Correspondingly, it would not have been obvious to one having ordinary skill in the art to oxidize phthalocyanine by doping using an electron acceptable compound, as recited.

Regarding claim 14, this claim is believed to be in condition for allowance at least for the reason that it is dependent on claim 11 discussed above. In addition, it is respectfully noted that Ogawa fails to disclose, teach, or otherwise suggest electron acceptable compounds such as TCNQ-F4 and V₂O₅ recited in this claim. The Examiner merely asserts that it would be obvious for a person of ordinary skill in the art to use these compounds. Applicants contend that the Examiner has failed to establish *prima facie* case of obviousness in that he has not established why such a person of ordinary skill would select the compounds claimed over any other appropriate compound. Correspondingly, the applicants requests the withdrawal of this rejection and the allowance of this claim as well.

With respect to claim 15, this independent claim has been amended above to specifically recite that a hole injection layer is doped with an electron acceptable compound. Thus, the above noted remarks regarding claim 11 set forth above are also applicable with respect to this rejection. Thus, the applicants contend that claim 15 is also in proper condition for allowance.

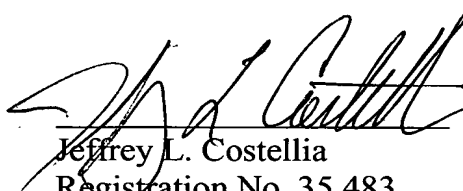
Claim 16 is dependent on claim 15, and thus, is also believed to be in proper condition for allowance. In addition, Ogawa fails to disclose, teach, or otherwise suggest electron acceptable compounds such as TCNQ-F4 and V₂O₅. Correspondingly, the remarks set forth above regarding claim 14 are also applicable

with respect to this rejection. Thus, the applicants request the withdrawal of this rejection and the allowance of this claim.

Finally, new claims 17 to 20 have been added by the above amendment. Newly added claim 17 recites a manufacturing method of a light emitting device comprising a hole injection layer and an electron acceptable compound. Claim 19 recites a manufacturing method in which the hole injection layer is formed using a multi-chamber system, and exposing the hole injection layer to oxygen gas is performed using the multi-chamber system. The manufacturing method using the recited multi-chamber system allows reduction in the total process time, for example, by eliminating the necessity for nitrogen displacement. Claim 20 recites an electronic device having a light emitting device according to the present invention of independent claim 15.

In view of the foregoing, it is submitted that the present application is in condition for allowance and a notice to that effect is respectfully requested. However, if the Examiner deems that any issue remains after considering this response, he is invited to call the undersigned to expedite the prosecution and work out any such issue by telephone.

Respectfully submitted,



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